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*Article*

# Improving the Methodology of Accounting for Intangible Assets in the ICT Sector

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**Abstract:** This article presents the author's methodological solutions for improving the accounting for intangible assets in the information and communication technology (ICT) sector. The study addresses three interrelated problems observed in the accounting practice of ICT enterprises: the incomplete recognition of internally generated intangible assets, uncertainty in the determination of useful lives, and insufficient disclosure. A systems approach, methodological modelling and comparative analysis were applied, and the proposals were benchmarked against IAS 38, IAS 36 and United States GAAP guidance on software costs. Three interconnected methodological solutions are developed. The first covers the recognition and initial measurement of internally generated assets and introduces a "technical feasibility point" criterion that objectively separates the research phase from the development phase of the software development life cycle, supported by a system of ICT-specific subaccounts 0411–0415. The second establishes recommended useful lives, a basis for selecting the amortisation method, and a four-indicator technological obsolescence monitoring cycle linked to impairment testing under IAS 36. The third proposes a five-group classification of digital assets and a three-tier disclosure system. The scientific novelty lies in integrating these solutions into a single chain within the standards in force, adapted to the ICT sector.

**Keywords:** intangible asset, accounting methodology, internally generated assets, technical feasibility point, technological obsolescence, digital assets, disclosure, subaccounts, ICT sector, financial reporting

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## 1. Introduction

An analysis of the accounting practice currently applied by enterprises in the information and communication technology (ICT) sector reveals a group of interrelated problems. Internally generated intangible assets — software products and digital platforms — are not recognised in full, a situation that may be described as an "accounting deficit". The determination of useful lives remains uncertain, technological obsolescence is not taken into account systematically, and disclosure is insufficient. As a consequence, the very assets that constitute the principal value of ICT enterprises are not reflected in the statement of financial position, and the information quality of financial reporting deteriorates [1], [2].

These problems are interconnected and therefore call for an integrated methodological solution rather than for isolated remedies. The recognition approach forms the basis for subsequent measurement, and the results of measurement reach the user of the financial statements only through disclosure. Improving the methodology of accounting for intangible assets consequently requires a systemic approach, adapted to the ICT sector, that covers the entire chain from recognition to disclosure. It is equally

important that such a methodology should not conflict with the standards in force: its purpose is to show how those standards can be applied more precisely within a particular sector [3], [4], [5].

The purpose of this article is to develop an integrated system for improving the methodology of accounting for intangible assets in the ICT sector. Three interrelated methodological solutions are presented in sequence — recognition and initial measurement; subsequent measurement and impairment; and the accounting for digital assets together with disclosure. The object of the research is the practice of accounting for intangible assets in large enterprises of the ICT sector of Uzbekistan [6], [7].

## 2. Materials and Methods

The research is based on a qualitative research and methodological design. Using a systems approach, the process of accounting for intangible assets was decomposed into interrelated stages — recognition, initial measurement, subsequent measurement, impairment and disclosure — and these stages were then designed as a single chain. The method of modelling was employed to develop the recognition algorithm, the cycle for assessing technological obsolescence, the classification of digital assets and the system of subaccounts.[8] By means of comparative analysis, the proposals were compared with international standards (IAS 38, IAS 36) and with foreign practice (United States GAAP).

Particular attention was paid to the principle of integrity in developing the methodological solutions: each solution relies on the outcome of the preceding one and creates the basis for the next. The recognition methodology brings the asset onto the statement of financial position and determines its cost, which provides the opening carrying amount for subsequent measurement; subsequent measurement preserves the carrying amount of the asset in a realistic condition throughout its service life, which generates reliable information for disclosure; and disclosure conveys the results to the user. The three solutions are therefore not a sum of separate procedures but an internally consistent system, and this systemic character constitutes the principal conceptual contribution of the methodology.[9][10][11]

The conceptual foundation of the methodology is formed by the definition of an intangible asset and by the matching principle: the costs of creating an asset should be allocated to the same periods as the revenues that the asset generates. The methodology rests on three principles: objectivity (recognition is based on clear, verifiable criteria), consistency (identical situations are accounted for identically) and sectoral relevance (the specific features of ICT are taken into account). The information base of the research consisted of national and international standards together with the publicly available financial statements of enterprises in the sector; only public data were used.

## 3. Result

The proposed methodology consists of three interrelated solutions that together cover the entire chain of accounting for intangible assets (Figure 1).

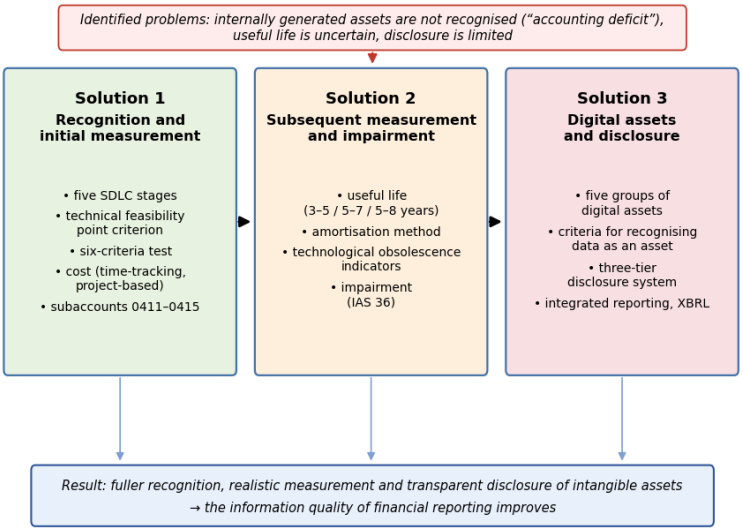



**Figure 1.** The integrated chain of the methodology of accounting for intangible assets in the ICT sector

Source: developed by the author.

3.1. Recognition and initial measurement of internally generated intangible assets

The first solution divides the software development life cycle (SDLC) into five stages — idea, feasibility assessment, design, programming and testing, and deployment — and proposes the criterion of the "technical feasibility point" for objectively separating the research phase from the development phase. Costs of the development phase are capitalised once the six criteria of IAS 38 are satisfied, namely the technical feasibility of completing the asset, the intention to complete it, the ability to use or sell it, the probability of future economic benefits, the availability of adequate resources, and the ability to measure the expenditure reliably. In order to measure cost accurately, time-tracking and project-based cost accounting are applied.

To support the recognition methodology, analytical accounting was also refined: a system of ICT-specific subaccounts within account 0400 is proposed — 0411 (internally generated software products), 0412 (acquired software products), 0413 (telecom and frequency licences), 0414 (digital platforms) and 0415 (results of research and development). These subaccounts improve not only the accounting records but also disclosure in the financial statements, since the enterprise becomes able to present detailed information by type of intangible asset. The methodology also accommodates iterative (Agile) development: the technical feasibility point is applied at the level of a functional unit, that is, a module or a release.

The conceptual basis of the recognition methodology is the definition of an intangible asset: an asset is a resource arising from past events, controlled by the enterprise and capable of generating future economic benefits. An internally generated software product begins to satisfy this definition during the development phase, and recognising it as an asset is therefore economically justified. The matching principle in turn requires the costs of creation to be allocated to the same periods as the related revenues; capitalising development costs and subsequently amortising them realises precisely this principle and reflects the financial result more accurately. The methodology does not breach the standards in force: it is fully consistent with the requirements of IAS 38 and National Accounting Standard No. 7, and merely indicates a route towards their more precise application in the ICT sector.[12]

3.2. Subsequent measurement and impairment

The second solution establishes recommended useful lives for the various types of ICT assets (Table 1) and justifies the selection of an amortisation method corresponding to the pattern in which the economic benefits of the asset are consumed — the straight-line method for stable assets and an accelerated method for rapidly obsolescing ones.

**Table 1.** Recommended useful lives of the principal intangible assets of the ICT sector

| Type of intangible asset | Recommended useful life |
|---|---|
| Application software products | 3–5 years |
| System software | 5–7 years |
| Digital platforms | 5–8 years |

Source: developed by the author.

The core of the methodology is the systematic assessment of technological obsolescence. Four indicators (Table 2) are monitored periodically and, depending on the outcome, either the remaining useful life is shortened or an impairment test is performed in accordance with IAS 36. This mechanism links the accounting treatment to the actual technological condition of the asset, which is decisive in a sector where product life cycles are short [13].

Table 2. Indicators of technological obsolescence

| Indicator | Substance of the indicator |
|---|---|
| New version or technology | a new version of the product, or an alternative technology, appears on the market |
| Decline in use | the intensity with which the asset is used by customers or internal users falls |
| End of support | technical support for the product is discontinued by the vendor or by the enterprise itself |
| Loss of compatibility | the asset ceases to be compatible with the enterprise's other systems or with market standards |

Source: developed by the author. Where one or more indicators are triggered, the remaining useful life is shortened or an impairment test is carried out under IAS 36.

3.3. Accounting for digital assets and disclosure

The third solution divides digital assets into five groups and determines an accounting approach for each of them (Figure 2): data, artificial intelligence models, digital platforms, digital content and domains, and crypto-assets. Criteria are proposed for recognising data as an asset — identifiability, control, economic benefit and reliable measurement. Where these criteria are satisfied, data are recognised at cost; where they are not, the information is conveyed through voluntary disclosure.

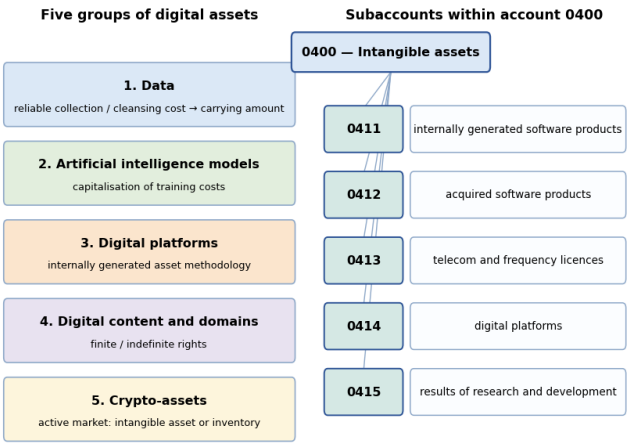



**Figure 2.** Five-group classification of digital assets and the ICT-specific system of subaccounts

Source: developed by the author.

The distinctive features of digital assets complicate their accounting treatment. The first is rapid variability: their value changes quickly in response to technological change and requires continuous reassessment. The second is the question of control, since proving ownership of data may be legally complex. In addition, digital assets frequently create value jointly: a platform collects data, those data are used to train an artificial intelligence model, and the model in turn improves the service provided by the platform. Taking this interdependence into account is important in measuring digital assets, because their value is formed not in isolation but within an ecosystem.

The central element of the disclosure methodology is a three-tier disclosure system (Table 3). Contemporary disclosure may be presented in digital formats — through the structured business reporting language XBRL — which allows information to be analysed and compared automatically and is particularly well suited to ICT enterprises.[14]

**Table 3.** The three-tier system of disclosure of intangible assets

| Tier | Status | Content of disclosure |
|---|---|---|
| I | Mandatory | amortisation method and useful life; carrying amount; movements in assets |
| II | Additional | significant measurement assumptions; sensitivity; volume of research and development expenditure |
| III | Voluntary | intellectual capital; brand; unrecognised value presented through integrated reporting |

Source: developed by the author.

## 4. Discussion

The three solutions operate as an integrated system and complement one another: the recognition methodology brings the asset onto the statement of financial position, subsequent measurement preserves its carrying amount in a realistic condition, and disclosure conveys both recognised and unrecognised value to the user. The methodology is introduced in harmony with the accounting system in force — it does not call for radical change but establishes additional procedures within the existing framework. This facilitates implementation and aligns the methodology with the process of transition to IFRS. Applied to the enterprises examined, the proposed methodology means that companies such as Uzbektelecom and UNICON.UZ would capitalise internally generated software assets in dedicated subaccounts, monitor technological obsolescence, and provide multi-tier disclosure in respect of digital platforms and intellectual capital.[15]

## 5. Conclusion

The research has produced an integrated system for improving the methodology of accounting for intangible assets in the ICT sector. First, a methodology for the recognition and initial measurement of internally generated intangible assets has been created: an algorithm linked to the stages of the SDLC, the "technical feasibility point" criterion separating the research and development phases, a system for measuring cost accurately (time-tracking and project-based cost accounting) and ICT-specific subaccounts 0411–0415.

Second, a methodology for subsequent measurement and impairment has been developed: recommended useful lives, an approach to selecting the amortisation method, and a mechanism that assesses technological obsolescence on the basis of indicators and links it to impairment under IAS 36. Third, a methodology for accounting for digital assets and for disclosure has been proposed: a five-group classification of digital assets, criteria for recognising data as an asset, and a three-tier disclosure system comprising mandatory, additional and voluntary levels.

The scientific novelty of this methodology lies in combining the three solutions into an integrated chain within the standards in force and adapted to the ICT sector, in which

every element is organically linked to the others and which together ensure fuller recognition, realistic measurement and transparent disclosure of intangible assets.

The practical significance of the methodology is manifested in raising the information quality of financial reporting and in reflecting the true value of the enterprise. From the standpoint of regulatory development, it is recommended that these methodological solutions — the recognition algorithm, the indicators of technological obsolescence, the system of subaccounts and the three-tier disclosure requirements — be incorporated into National Accounting Standard No. 7. The accounting methodology developed here may be complemented by a corresponding audit methodology, which together would constitute an integrated system of accounting and audit for intangible assets specific to the ICT sector.

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